The Emerging "Physicality Premium" in the AI-Era Labor Market

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ABSTRACT

This paper introduces the concept of the *physicality premium*—a structural wage differential favoring physical labor in post-industrial economies—and situates it within both empirical and theoretical frameworks. Historically, the dominance of the *skill premium* reflected the scarcity of cognitive and educational capital. Yet mass higher education and the rise of artificial intelligence (AI) have begun to erode that advantage, revealing the hidden scarcity of embodied, manual, and relational work. The paper distinguishes between **contingent wage premiums**, which fluctuate with technological or demographic conditions, and a **normative or equilibrium physicality premium**, which persists even in a balanced market. Drawing on the theory of compensating wage differentials and recent research in behavioral economics and cultural sociology, it argues that humans exhibit an intrinsic preference for intellectual over physical work; therefore, physical jobs must offer higher compensation to attract sufficient labor supply. This asymmetry, historically masked by cognitive scarcity, is now resurfacing as automation commodifies intellectual labor. The *physicality premium* thus embodies both an economic necessity and a moral correction to long-standing cultural hierarchies between "head" and "hand", which paradoxically responds to these historical values and underlying axiology. The paper concludes that this equilibrium principle will define the labor markets of the AI era, reshaping policy, education, and the social valuation of work.

Introduction

For most of the modern era, workers with higher education and cognitive skills have enjoyed a substantial wage premium over those in manual or less-skilled jobs. This **college wage premium** – the extra earnings for workers with intellectual capital (degrees, analytical skills, etc.) – has been a defining feature of labor markets since the late 20th century. It was underpinned by the scarcity of advanced skills and the rise of technologies that favored skilled labor. Physical labor, by contrast, was often lower-paid and seen as less desirable. However, this dynamic may be shifting. **Mass higher education** and an oversupply of graduates have begun to erode the skill premium in some countries, and now **artificial intelligence (AI)** and automation are poised to further redistribute the advantages. With AI automating many cognitive tasks, the **"default premium" of physical work** (tasks requiring human presence, manual dexterity, and in-person interaction) is becoming more visible. In other words, as intellectual skills become less scarce, jobs grounded in physicality and on-site work may command relatively greater value.

In the contemporary economy, cognitive effort has become less scarce, or at least physical effort has grown relatively scarcer. Yet even beyond empirical scarcity, there exists a deeper behavioral asymmetry: *ceteris paribus*, individuals generally prefer intellectually intensive work to physically demanding work. In other words, in equilibrium and not merely as a contingent outcome, most people would rather engage in tasks that are mentally stimulating, socially valued, and less physically strenuous—even if these jobs pay less. Consequently, workers require a compensating premium to accept physically intensive occupations. Put differently, many would choose a lower-paid, more intellectual job over a higher-paid but physically demanding one, simply to avoid the disutility associated with bodily effort.

This paper explores the general framework of this emerging "physicality premium," examining how the camouflage of intellectual capital's scarcity is wearing off and what that means for the future of work.

The Historical Premium on Intellectual Capital

For decades, possessing intellectual capital (higher education, analytical and creative skills) has been a ticket to higher wages. Economists have long documented a significant **skill premium** for college-educated workers, especially in advanced economies. From the 1980s through the 2000s, technological change was largely **skill-biased** – computers and information technology automated routine tasks but **complemented** the work of highly educated professionals (Autor & Dorn, 2013). This raised demand (and pay) for cognitive skills, while many routine blue-collar and clerical jobs were eliminated or offshored. David Autor and colleagues describe how digital technologies **substituted** for routine, codifiable work (e.g. factory assembly or bookkeeping calculations) and **augmented** non-routine problem-solving and managerial work (Autor & Dorn, 2013). The result was rising inequality and a widening college–high school wage gap in countries like the United States during the late 20th century.

However, this pattern was not uniform globally. In the U.S. and U.K., the college wage premium grew substantially in the 1980s and 1990s. By contrast, many Continental European countries experienced **stable or even falling returns to education** in the same period (Hidalgo-Pérez, 2010). For example, Spain's college wage premium was relatively flat until the mid-1990s, then **declined steadily** in the 2000s as the supply of graduates surged. This hints that the skill premium is not a law of nature; it depends on the balance of supply and demand for educated labor.

A Theoretical Framework: Intrinsic Differentials and Compensating Preferences

While the preceding section outlined the historical evolution of the *skill premium* as an empirically observed phenomenon, it is crucial to recognize that not all wage differentials arise from changing supply–demand conditions. Some reflect deeper, **intrinsic asymmetries in human preference and social valuation**. To fully understand the notion of a *physicality premium*, one must distinguish between two fundamentally different sources of labor-market premiums:

1. **Empirical or contingent premiums**, which fluctuate with technological or demographic shifts (e.g., scarcity of cognitive or manual labor).
2. **Intrinsic or compensating premiums**, which persist even in theoretical equilibrium because certain kinds of work historically have been inherently less desirable, riskier, or socially devalued (and therefore should command a long-term premium).

This theoretical framework clarifies that even in a perfectly competitive, non-intervened market, a **default premium in favor of physical work** should exist—reflecting human preference for less effortful, cleaner, and more prestigious occupations. The *normative physicality premium* proposed here extends classical labor theory, grounding it in both microeconomic reasoning and cultural psychology.

1. Compensating Wage Differentials and Human Disutility

The foundation for intrinsic wage differentials lies in the classical theory of **compensating wage differentials**.
In *The Wealth of Nations*, Adam Smith (1776) observed that wages vary not only by productivity but also by the *agreeableness or disagreeableness* of a job. He identified "five circumstances" producing wage differentials: (1) the ease or hardship of employment, (2) the cleanliness or dirtiness of work, (3) the level of responsibility, (4) the constancy of employment, and (5) the probability of success. Smith noted that "the trade of a butcher is a brutal and odious business, but it is in most places more

profitable than the greater part of common trades," illustrating the basic mechanism of compensation for unpleasantness.

Modern labor economics formalized this intuition. Sherwin Rosen's (1986) **hedonic wage model** shows that equilibrium wages equalize utilities across workers with heterogeneous preferences and job characteristics. In this framework, jobs with greater *non-pecuniary disutility* (e.g., risk, dirt, low prestige, or physical strain) must pay higher wages to attract sufficient labor supply. As Rosen writes, equalizing differences are "a cornerstone of wage determination," ensuring that the total utility—pecuniary plus non-pecuniary—remains constant across occupations.

Hence, even in a frictionless market, **wage differentials compensate for the subjective costs of work**. In particular, when labor is perfectly mobile and information is complete, any task associated with greater physical exertion, risk, or stigma will command an intrinsic premium. Smith's and Rosen's frameworks jointly imply that a *default physicality premium* should exist in equilibrium—not as an empirical anomaly, but as a structural property of human utility functions.

2. Preference Asymmetry: The Human Bias Toward Intellectual Work

Classical and behavioral evidence suggests that, *ceteris paribus*, most individuals prefer intellectual to physical work. This **asymmetry of preference** has both physiological and cultural roots. Humans tend to minimize physical and cognitive effort (Dahlquist et al., 2020); when compensation and security are equal, they gravitate toward cleaner, safer, and more prestigious roles. Laboratory experiments confirm that participants require higher monetary rewards to perform physically or mentally demanding tasks than for easy or sedentary ones (Dahlquist et al., 2020).

Large-scale surveys corroborate this tendency. The Pew Research Center (2025) reports that blue-collar workers are "markedly less satisfied" with their jobs and "feel less respected" than their white-collar counterparts. Manual workers more often

describe their occupation as “a way to get by” rather than a source of identity or fulfillment. Such attitudinal asymmetries suggest that the **utility function of work includes a non-monetary term for perceived dignity and comfort**—attributes typically higher in intellectual roles.

Consequently, even if supply and demand were perfectly balanced, a persistent *physicality premium* would be required to induce workers into occupations perceived as less desirable. This premium offsets the disutility associated not only with physical strain but also with **symbolic and psychological costs**—lower status, limited autonomy, and reduced social esteem.

3. Beyond Utility: The Symbolic Hierarchy of Labor

Economic preference alone does not explain the full asymmetry between intellectual and physical work. The division of labor is also a **cultural hierarchy of meaning**. Since antiquity, intellectual labor has been associated with virtue and refinement, while manual labor has been linked to necessity and servitude. Smith himself echoed this bias when he lamented that a worker confined to “a few simple operations…generally becomes as stupid and ignorant as it is possible for a human creature to become.” This historical association between manual work and intellectual inferiority persists in modern societies through prestige structures: academic, managerial, and creative professions carry symbolic capital that physical jobs lack.

Sociologists such as **Richard Sennett (2008)** and **Matthew Crawford (2009)** have shown how industrial capitalism deepened this divide by separating “head” from “hand.” Sennett argues that craftwork embodies a form of ethical engagement and self-development that modern office labor has lost, while Crawford exposes how contemporary economies undervalue manual competence, even as such work demands intelligence, creativity, and judgment. Both authors insist that the **dignity**

of manual work has been culturally eroded, producing a symbolic disutility that must be counterbalanced economically.

From this perspective, the *normative physicality premium* is not merely an equilibrium correction for effort, but a **moral correction for cultural bias**. It quantifies what social status denies: the legitimate worth of embodied labor. In equilibrium, if prestige differentials remain fixed, only wage differentials can restore parity between head and hand.

4. Material Reality and the Limits of Axiological Reversal

Over time, material conditions can reshape symbolic hierarchies. If, in a future capitalist equilibrium, blue-collar occupations consistently yield higher income than white-collar ones, the traditional hierarchy that associates intellectual work with higher social status may gradually erode. In such a scenario, social preferences could invert: individuals might begin to admire and identify with physical trades precisely because they command greater economic power. This reversal would illustrate how **material reality can reshape axiology**, as values adjust to new distributions of wealth and prestige.

Beyond these historical values and shifting axiologies—which may evolve as societies reassess the social worth of intellectual versus physical labor, often depending on the relative income levels achieved by each—there remains a more enduring asymmetry. In the short and medium term, changing cultural perceptions may temporarily amplify the *physicality premium*, as social prestige adjusts more slowly than market wages. Yet even beyond these contingent and historical effects, a certain intrinsic premium seems to persist. Material reality can alter social values, but it cannot fully erase the biological and psychological asymmetries embedded in human labor preferences.

I argue that, independently of such fluctuations, there exists a **minimal or structural premium** rooted in biological and psychological predispositions: humans display an innate inclination to avoid strenuous physical effort, a tendency historically moralized through notions such as the "capital sin of sloth." This natural bias—closely related to the pursuit of comfort and the avoidance of pain—helps explain why, *ceteris paribus*, individuals generally prefer less physically demanding occupations. While intellectual work may bring its own forms of fatigue or existential boredom, the underlying asymmetry endures. The «*prima de fisicalitat*» thus integrates both a **cultural dimension**, which is historically variable, and a **biological dimension**, which is more stable and universal. The latter explains why, even in a world that comes to glorify physical work, a structural premium for bodily effort would persist as a feature of human equilibrium rather than a temporary market distortion.

5. Toward a Normative Physicality Premium

Synthesizing these strands, we can formally articulate three layers of wage differentiation:

1. **The Empirical Skill Premium** – historically observed advantage of educated workers, derived from scarcity of intellectual capital.
2. **The Emerging Physicality Premium** – contemporary reversal driven by AI and saturation of cognitive labor.
3. **The Normative or Equilibrium Physicality Premium** – a permanent compensating differential that should exist *a priori* in any free market, reflecting the universal human preference for intellectual work and the disamenities attached to physical labor.

The first two are contingent and measurable; the third is **structural and conceptual, or even biological**. It derives from the logic of equalizing differences and from the enduring asymmetry of social desire. Even if automation, demographics, and

education reach equilibrium, human preference would still assign greater subjective cost to physical effort and lower prestige. Therefore, rational market dynamics require that physical work be compensated with a positive premium in equilibrium wages.

In this sense, the *normative physicality premium* is both **an economic necessity and a moral equilibrium condition**. It restores fairness between forms of labor by translating social disutility into economic reward. The empirical trends observed in today's AI-era labor markets—the narrowing of the college wage gap and rising pay for physical trades—may thus be interpreted not as temporary distortions, but as the partial *re-emergence of an underlying equilibrium law* that was long masked by the historical scarcity of cognitive capital.

Education Expansion and a Diminishing Wage Gap

One factor now exposing the hidden "default" value of physical work is the **mass expansion of higher education**. As college degrees became commonplace, the once-scarce resource of intellectual talent became more abundant. **In theory, if the growth in demand for skilled, graduate labor does not keep pace with the growth in supply of graduates, the relative wages of college-educated workers will decline** – i.e. a falling college wage premium. This is exactly what's been observed in some markets. An oversupply of university-educated workers leads many to take jobs that do not require a degree (underemployment), and it puts downward pressure on graduate wages.

In the United States, for instance, **the share of workers with tertiary education now far exceeds the share of jobs requiring such education**. According to the U.S. Bureau of Labor Statistics, fewer than 30% of jobs require an associate's degree or higher, yet about 50% of workers have postsecondary degrees (Yamada, 2015). By the 2010s, the flood of college graduates had outpaced the creation of high-skill jobs,

contributing to a **stagnation in the college wage premium** (Yamada, 2015). Some studies even estimate that nearly half of U.S. college grads are in jobs that *don't* actually need a degree, with millions underemployed as a result. The consequence is a shrinking pay gap between graduates and non-graduates. Young people have noticed this shift: a university diploma no longer guarantees the salary boost it once did, especially in fields crowded with graduates.

Across OECD countries, recent data confirms a **narrowing wage gap between high- and low-skill occupations**. From 2014–2018, real wages grew slowest in many higher-skilled professions (for example, legal and business professionals saw only ~4–5% real wage growth), while some lower-skilled occupations saw much faster gains of 9–12% (Georgieff, 2024). *Assemblers* in manufacturing, *craft workers*, and *personal service workers* had among the highest wage growth rates, outpacing many white-collar roles (Georgieff, 2024) . Part of this compression is due to policy (e.g. minimum wage increases boosting low-end pay (Georgieff, 2024) , but it also reflects labor market dynamics: when everyone and their cousin has a bachelor's degree, educated labor is no longer a rare commodity commanding a premium. The "excess" of college graduates, a trend already evident in the 2010s, was reducing the wage gap even before AI's recent advances – essentially **camouflaging any inherent value that physical and manual work might have by default.**

Automation and AI Erode Cognitive Scarcity

If mass education has weakened the advantage of human intellectual capital, **artificial intelligence may erode it even further**. Traditional automation primarily threatened **physical, routine jobs** – think factory robots replacing assembly line workers, or ATM machines replacing some bank tellers. These technologies hit blue-collar workers hardest in past decades. In contrast, the new wave of AI – especially **generative AI** and machine learning – is targeting many white-collar, cognitive tasks that were once considered safe from automation. As a recent Brookings report notes, unlike earlier waves of automation that affected mostly "routine, blue-collar work,"

generative AI is poised to disrupt a broad array of *cognitive* and *non-routine* tasks, especially in mid- to high-wage professions (Muro et al., 2024). In other words, AI is encroaching on the turf of knowledge workers: writing code, drafting documents, analyzing data, even creating art and legal research. These are tasks that typically require a college degree – but AI models like GPT-4 can perform them (at least partially) without one.

By 2024, over 30% of workers could have **at least half of their core job tasks exposed to AI automation**, with higher-paid occupations among the most affected (Muro et al., 2024). Fields such as software engineering, law, finance, and architecture – once low on the automation risk scale – are now *highly exposed* to AI substitution (Muro et al., 2024). This trend fundamentally **changes the scarcity calculus**. Advanced cognitive skills (maybe not the most advanced cognitive skills), by themselves, may become less of a unique selling point for human labor if AI can perform many such tasks cheaply and at scale. The **scarcity of "intellectual capital" diminishes** when much of what that capital produces can be automated or augmented by algorithms.

At the same time, many **physical, in-person, and manual tasks remain difficult to automate**. Current AI is largely *disembodied* – it exists in software and can handle information, but not physical manipulation of the real world (Muro et al., 2024). Robotics is advancing more slowly than digital AI. Thus, **generative AI is not likely to disrupt physical, hands-on jobs in the near term (barring major breakthroughs in robotics)**[12]. Jobs that involve moving around in unpredictable environments, using dexterity, or personally caring for people – such as construction, plumbing, electrical work, nursing, cleaning, food service, repair work – still largely require human labor.

It is important to note that this technological lag between artificial intelligence and robotics has been widely discussed in the automation literature. While **AI systems have made exponential progress in symbolic reasoning, perception, and**

language, **robotics still faces major constraints** in perception, dexterity, and contextual adaptability. This asymmetry is sometimes referred to as part of **Moravec's paradox** (Moravec, 1988), which observes that tasks that humans find effortless—such as movement, grasping, and object recognition—are extremely difficult to automate, whereas abstract reasoning and symbolic manipulation are comparatively easy for machines. Scholars such as **Brynjolfsson and McAfee (2014)**, **Autor (2014)**, and **Frey and Osborne (2017)** have noted that **cognitive automation advances much faster than physical automation**, delaying the full substitution of manual labor. Industrial robotics in highly structured environments (assembly lines, repetitive manipulation) has long been mature, but **adaptive, mobile, and versatile robotics**—the kind required to replace humans in unstructured settings like construction, care, or maintenance—remains technologically and economically behind. This persistent gap strengthens the case for a **physicality premium**, since work that depends on embodied presence and situational adaptability **remains difficult to replicate and thus retains its relative scarcity**.

These roles are often **"non-tradable"** (you can't outsource them overseas easily) and **non-automatable with current tech**, giving them a shelter from the AI storm. Indeed, analyses show **manual and physically intensive sectors face the least AI exposure**, while the onslaught is centered on information-based work (Muro et al., 2024). **Unless and until robots can match human motor skills and adaptability, there is a built-in premium on physical effort.** This is the essence of what we call the **default physicality premium** – the inherent value of work that must be done in person, simply because it cannot be easily digitized or replicated by machines.

The "Physicality Premium" Becomes Visible

With educated labor and cognitive skills becoming less scarce (thanks to education expansion and AI augmentation), the labor market is starting to reveal a *relative*

premium for physical and manual work. This does *not* necessarily mean that all physical jobs will suddenly pay more than all white-collar jobs. Rather, it means the gap is closing, and in some cases physical work shortages are raising wages above those of mid-tier knowledge jobs. The scarcity that once resided in intellectual skills is increasingly found in trades and manual services. Only the prior lack of enough skilled graduates "camouflaged" this effect – when intellectual talent was scarce, it commanded high wages that overshadowed the modest pay of physical jobs. Now that intellectual talent is abundant (and further augmented by AI), the **underlying scarcity of willing and able physical workers is coming to the forefront**.

Evidence for this emerging physicality premium can be seen in multiple labor market indicators:

- **Shortages and Rising Pay in Skilled Trades:** Many countries are experiencing acute shortages of skilled tradespeople – carpenters, electricians, plumbers, welders, mechanics – as an entire generation of older trades workers retires and fewer young people replace them. A construction boom combined with a cultural push toward college has left an insufficient supply of trades labor. By basic economics, **when demand exceeds supply, wages rise**. For instance, in the United States the post-pandemic economy saw construction wages jump dramatically (over 20% increase in median pay between 2021 and 2024 in some data) as builders scrambled to find workers. Recruiters note that the **skilled labor shortage is driving up salaries for tradesmen**, with firms raising pay to retain talent in fields like construction and manufacturing (Skillwork, 2025). Similarly in Europe, trade employers report having to offer higher wages and benefits to attract scarce young apprentices. The result: some blue-collar roles now *rival or exceed* the earnings of typical graduate jobs.

- **Blue-Collar vs White-Collar Pay Convergence:** Recent salary comparisons underscore how narrow the gap has become. In the UK, for example, a 2024 survey found **experienced plumbers earn about £48,700 on average, and**

electricians around £47,300 – levels that dwarf many graduate professional salaries **(Skillwork, 2025). These tradespeople outearn** teachers (~£37,800), accountants (~£37,700), architects (~£38,200)**, and even newly qualified pharmacists (Skillwork, 2025). In fact, a construction *site manager* (often promoted from the trades) tops the list at over £51k, illustrating that vocational paths can lead to higher income than many university paths (Skillwork, 2025). The old assumption that a college degree automatically means higher pay than a manual trade is no longer true across the board. A similar pattern is seen in the U.S., where roles like** electricians, plumbers, and HVAC technicians **commonly pay in the tens of thousands per year (often $50k–$80k) – comparable to the national median for bachelor's degree holders – especially when one starts working earlier and with much less student debt. In short,** the wage gap that once strongly favored white-collar professionals is shrinking** in practice.

- **Low-End Wages Rising Faster than High-End:** As noted earlier, aggregate wage data from OECD countries show **lower-paid occupations seeing faster wage growth in recent years than higher-paid ones**, contributing to a slight compression of wage inequality (Georgieff, 2024) . This is partly due to policy (e.g. raising minimum wages lifts the bottom) but also reflects market shortages in traditionally low-paid, high-turnover jobs like food service, caregiving, and logistics. In many wealthy countries, unemployment is at historic lows, and employers from restaurants to warehouses must pay more to attract workers for physically demanding jobs. Meanwhile, salaries in some professional fields have plateaued as those labor markets are saturated. This **relative catch-up of manual and service wages** is making the "default" value (in the ideal state of equilibrium) of physical work more apparent. When a delivery driver or warehouse selector can earn overtime pay that rivals the salary of an entry-level college graduate in, say, publishing or academia, it challenges long-held expectations about pay scales.

In sum, as the **intellectual saturation** of the workforce and the rise of AI strip away the historically high returns to cognitive ability alone, the market is re-weighting the importance of other skill sets. The "premium" once earned almost exclusively through brain work is increasingly accessible via brawn and craft – or at least the gap is much smaller than before. This does not mean that surgeons or software engineers will earn the same as janitors or farm laborers; education and specialized skills still matter. But **the default assumption that physical = low pay and cognitive = high pay is breaking down**. We are moving toward a labor market where physical and technical skills (wielded by humans) cannot be taken for granted – in fact, they may become relatively **scarce** compared to an oversupply of college-educated candidates and AI-powered tools.

Implications for Policy and Society

The prospect of a stronger physicality premium has wide-ranging implications. **Education policy** may need to adjust: if the returns to a generic college degree continue to fall, societies should reconsider the "university for all" model. Investing in **vocational training, apprenticeships, and trade schools** could become more important to meet the demand for physical and technical skills. As one trade industry report quipped, "Money talks – and when it comes to annual salaries, a career in construction trumps many graduate roles" (Skillwork, 2025). Policymakers should ensure that young people get accurate information about labor market returns; currently, many youth (and their parents) still assume that not getting a degree is a ticket to inferior earnings, which is increasingly not the case (Skillwork, 2025). Aligning educational pathways with the economy's needs means elevating the status and quality of training for jobs that require physical presence, from healthcare support to advanced manufacturing and green energy installation.

For workers and unions, a shift toward valuing physical work more could **strengthen bargaining power** in traditionally low-wage sectors. Labor shortages already gave leverage to workers in hospitality, retail, and logistics to demand better pay and

conditions in recent years. If AI leads employers to cut some office jobs while struggling to fill hands-on roles, we may see more pressure to improve wages and respect for those in the latter category. **Occupational prestige** might also evolve – e.g. skilled trades may gain social esteem as lucrative, essential careers, countering the old stigma that such jobs are a "fallback" for those who couldn't get into college (Skillwork, 2025). This could further balance the distribution of talent between cognitive and manual fields.

With the narrowing gap between blue-collar and white-collar workers—between those with formal degrees and theoretical skills and those with more practical or manual expertise—it is often argued that, while blue-collar workers may initially earn higher wages, white-collar professionals retain greater long-term income potential. Historically, this has been true: cognitive and credentialed occupations have offered broader opportunities for upward mobility over time. Yet this assumption may no longer hold in the age of artificial intelligence. As AI increasingly augments manual and technical work—enhancing precision, efficiency, and even decision-making—it could empower skilled physical workers to reach productivity and income levels that rival, or even surpass, those of many traditional knowledge professionals. In this sense, AI might not only narrow the wage gap but also **invert the hierarchy of opportunity** between manual and intellectual labor.

However, there are also **risks and uncertainties**. If AI displaces large numbers of white-collar workers, some of those workers might eventually seek jobs in lower-skill sectors, potentially increasing competition there and dampening wages (at least until the economy adjusts). We saw hints of this in past recessions, where college grads took barista or retail jobs – though often temporarily. The ultimate outcome depends on how well the economy creates *new* jobs and tasks to absorb displaced workers. Historically, technological revolutions eventually lead to new industries and roles (the classic example: 100 years ago a huge share of workers were in agriculture; machines displaced them, but new jobs in manufacturing and services arose). With AI, some economists like Daron Acemoglu and David Autor argue we need *directed*

innovation – using AI to complement human labor and create **"good jobs"** rather than simply cut labor costs (Autor, 2015). If AI is deployed in ways that **augment** workers (including skilled trades and services), it could boost productivity and justify higher pay in those fields. If used purely to automate and replace, it could depress wages broadly – though as noted, physical tasks are safer for now.

Another implication is the **geographic and class impact**. Many physically-tethered jobs must be done on-site (you can't fix pipes or wire a house remotely), potentially bolstering local job opportunities in sectors like construction, installation, healthcare, and personal services. This could benefit regions that lost factory jobs in the past – e.g. smaller cities or rural areas might see growth in trades and healthcare roles that can't be easily centralized in global hubs. Meanwhile, some urban professional workers might feel the squeeze from AI-driven redundancies. It's conceivable that the social narrative around "blue-collar vs white-collar" work will shift, as each finds a new place in the digital age.

Finally, one must consider that the **"physicality premium" might be temporary or transitional**. If robotics and AI eventually do conquer many physical tasks (self-driving vehicles replacing truckers and chauffeurs, robotic caretakers in eldercare, automated construction techniques, etc.), then physical labor could face the same kind of displacement in the longer run. Some analysts point to **Polanyi's paradox** – the idea that humans have abundant tacit know-how that we can't fully articulate, which has made automation of many tasks difficult (Roberts, 2014). AI is making strides in areas once thought exclusively human (language, perception), but robotics still struggles with many tacit physical skills like general household chores or intricate craftsmanship. **Moravec's paradox** likewise notes that things children can do effortlessly in the physical world (like recognizing objects, balancing, using hand-eye coordination) are extremely hard for AI and robots. These paradoxes suggest that *human physical and sensory capabilities remain a last frontier* for automation. Thus, the labor market might enjoy a fairly durable period where human physical presence is a key value-add. But we should not be complacent – **continuous upskilling,**

adaptability, and a focus on roles that pair human strengths with technology will be critical. For example, a nurse who can leverage AI diagnostic tools while providing compassionate in-person care, or a contractor who operates advanced machinery to retrofit buildings, will thrive in a hybrid physical-digital economy.

And, to be fair, artificial intelligence represents a form of machine learning through which machines can identify and model patterns that humans have historically been unable to compute or formalize algorithmically. By doing so, AI extends the boundaries of human cognition: it not only automates intellectual processes once thought exclusive to human reasoning but also redefines what kinds of knowledge and skills remain distinctly human. The slower progress of robotics compared to artificial intelligence may therefore not reflect an inherent limitation of robotics itself, but rather the historical inability of human programmers to model and codify the complex patterns required for embodied interaction. Artificial intelligence—particularly advanced machine learning—provides precisely the means to overcome that limitation. In essence, machines can now learn and generate the patterns that human engineers were previously unable to express computationally. As AI begins to design and optimize robotic behavior autonomously, the traditional gap between "intelligent" and "physical" automation may gradually close, accelerating the material embodiment of intelligence itself.

Conclusion

The default premium of physicality is an idea whose time appears to be coming. What it signifies is that there is an intrinsic economic value in work performed by human hands and presence, a value that was long overshadowed by the outsized rewards for cognitive, office-based work. As the scales tip – through the expansion of education, the glut of degree-holders, and now the astonishing rise of AI able to perform intellectual tasks – the hidden scarcity of physical work capacity is being revealed.

We are likely to see a labor market where a balance is restored between head and hand: each type of work rewarded more commensurately with its true contribution and scarcity. Already, wage trends and labor shortages point in this direction, with many manual and service jobs gaining ground on white-collar pay.

Yet, beyond this empirical rebalancing, the logic of the *physicality premium* rests on a deeper theoretical foundation. As the framework of **compensating differentials** and **human preference asymmetry** shows, even in a perfectly competitive and fully informed market, physical labor would require a *structural premium* to offset its inherent disutility and lower social prestige. Most people, *ceteris paribus*, prefer intellectual to physical work: it is cleaner, safer, and socially honored. Therefore, the normative or equilibrium *physicality premium* should exist by default (in the enough long term), independent of short-term market imbalances. What we are witnessing today may simply be the empirical reappearance of a principle that has always been implicit in economic theory – that physical effort, risk, and stigma must be compensated by higher returns if markets are to remain in equilibrium.

From a policy perspective, embracing this shift means reevaluating our assumptions. We must acknowledge that intellectual talent is no longer so exclusive – and that not everyone can or should be funneled into purely cognitive careers. Likewise, we should celebrate and invest in the human skills that AI cannot (yet) replicate: physical dexterity, real-world problem solving, direct human empathy and care, and multi-skilled trades that keep our infrastructure running. These abilities may become the new locus of comparative advantage for human labor. In a sense, the future of work could re-emphasize our human physicality and ingenuity in tandem with smart machines.

In conclusion, the only reason the *physicality premium* was not evident before was that intellectual capital was in short supply. That scarcity has been remedied – first by mass education and now by AI – and consequently the value of the work that only humans can do in the physical realm is rising to the surface. But the present shift is

more than a temporary correction: it is the unveiling of a **permanent equilibrium principle** long hidden under historical contingencies. We are entering an era where a plumber or electrician might outrank a psychologist or financial analyst in economic terms, not because one is "better" than the other, but because the market has finally caught up with the reality of human preferences, disutility, and technological substitution. The challenge and opportunity ahead lie in managing this transition: protecting workers through it, retraining those displaced by AI for roles where human skills are still needed, and ensuring that the dignity of work is upheld—whether it is work of the hands or of the mind. The hope is that AI will ultimately augment both kinds of labor; but it is clear that the age of an unquestioned intellectual wage premium is fading, and a new balance is emerging—one in which physical and intellectual labors stand on more equal and theoretically justified footing. *At least, while artificial intelligence and robotics have not yet found a way to replace us completely.*

References

Acemoglu, D., & Autor, D. (2011). Skills, tasks and technologies: Implications for employment and earnings. En O. Ashenfelter & D. Card (Eds.), *Handbook of Labor Economics* (Vol. 4B, pp. 1043–1171). Elsevier.

Autor, D. H. (2014). Polanyi's paradox and the shape of employment growth. *NBER Working Paper* No. 20485. https://doi.org/10.3386/w20485

Autor, D. H. (2015). Why are there still so many jobs? The history and future of workplace automation. *Journal of Economic Perspectives, 29*(3), 3–30. https://doi.org/10.1257/jep.29.3.3

Autor, D. H., & Dorn, D. (2013). *The growth of low-skill service jobs and the polarization of the US labor market. American Economic Review, 103*(5), 1553–1597. Retrieved from https://doi.org/10.1257/aer.103.5.1553

Autor, D. H., & Salomons, A. (2023). *The task content of technological innovation: Automation, complementarity, and labor demand. MIT Work of the Future Report.* Retrieved from https://workofthefuture.mit.edu

Brynjolfsson, E., & McAfee, A. (2014). *The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies.* New York, NY: W. W. Norton.

Crawford, M. B. (2009). *Shop class as soulcraft: An inquiry into the value of work.* New York, NY: Penguin Press.

Dahlquist, K. D., Grahn, J. A., White, M. A., & Zenko, Z. (2020). Subjective (dis)utility of effort: Mentally and physically demanding tasks. *Cognitive Research: Principles and Implications, 5*(74). https://doi.org/10.1186/s41235-020-00266-5

Federation of Master Builders. (2024). *Tradespeople vs. graduates earnings survey.* [Press release]. Retrieved from https://www.fmb.org.uk

Felgueroso, F., Hidalgo, M., & Jiménez-Martín, S. (2010, May 5). *Explaining the fall of the skill wage premium in Spain* [Preliminary draft]. Paper prepared for the FEDEA Annual Monograph Conference **Talent, effort and social mobility** (19–20 May 2010). https://www.fedea.net/meritocracia/pdf/skill_wage.pdf

Felten, E., Raj, M., & Seamans, R. (2019). *The occupational impact of artificial intelligence: Labor, skills, and polarization*. NBER Working Paper No. 25684. Retrieved from https://www.nber.org/papers/w25684

Frey, C. B., & Osborne, M. A. (2017). *The future of employment: How susceptible are jobs to computerization? Technological Forecasting and Social Change, 114*, 254–280. https://doi.org/10.1016/j.techfore.2016.08.019

Georgieff, A. (2024). *Artificial intelligence and wage inequality* (OECD Artificial Intelligence Papers, No. 13). OECD Publishing. https://doi.org/10.1787/bf98a45c-en

Georgieff, A., & Hyee, R. (2021). *Artificial intelligence and jobs: A cross-country analysis of occupational exposure. OECD Social, Employment and Migration Working Papers, No. 255*. Paris: OECD Publishing.

Goldin, C., & Katz, L. F. (2008). *The race between education and technology*. Cambridge, MA: Harvard University Press.

Graeber, D. (2018). *Bullshit jobs: A theory*. New York, NY: Simon & Schuster.

Hidalgo-Pérez, M. (2010). *The puzzling fall of the skill wage premium in Spain. Spanish Economic Review, 12*(3), 207–228.

Lavetti, K. (2023). Compensating wage differentials in labor markets: Empirical challenges and applications. *Journal of Economic Perspectives, 37*(3), 189–212. https://doi.org/10.1257/jep.37.3.189

Moravec, H. (1988). *Mind children: The future of robot and human intelligence*. Cambridge, MA: Harvard University Press.

Muro, M., Liu, S., Whiton, J., & Kulkarni, S. (2024). *Generative AI and the future of work.* Washington, DC: Brookings Institution. Retrieved from https://www.brookings.edu

OECD. (2024). *Artificial intelligence and wage inequality. OECD Employment Outlook 2024*, Chapter 2. Paris: OECD Publishing.

Pew Research Center. (2025). *Blue-collar workers are less satisfied at work, less attached to their jobs than other U.S. workers.* Washington, DC. Retrieved from https://www.pewresearch.org

Roberts, R. (Host). (2014, October 6). *David Autor on the future of work and Polanyi's paradox* [Audio podcast episode]. In *EconTalk*. Library of Economics and Liberty. https://www.econtalk.org/david-autor-on-the-future-of-work-and-polanyis-paradox/

Rosen, S. (1986). The theory of equalizing differences. In O. Ashenfelter & R. Layard (Eds.), *Handbook of labor economics* (Vol. 1, pp. 641–692). Amsterdam: Elsevier.

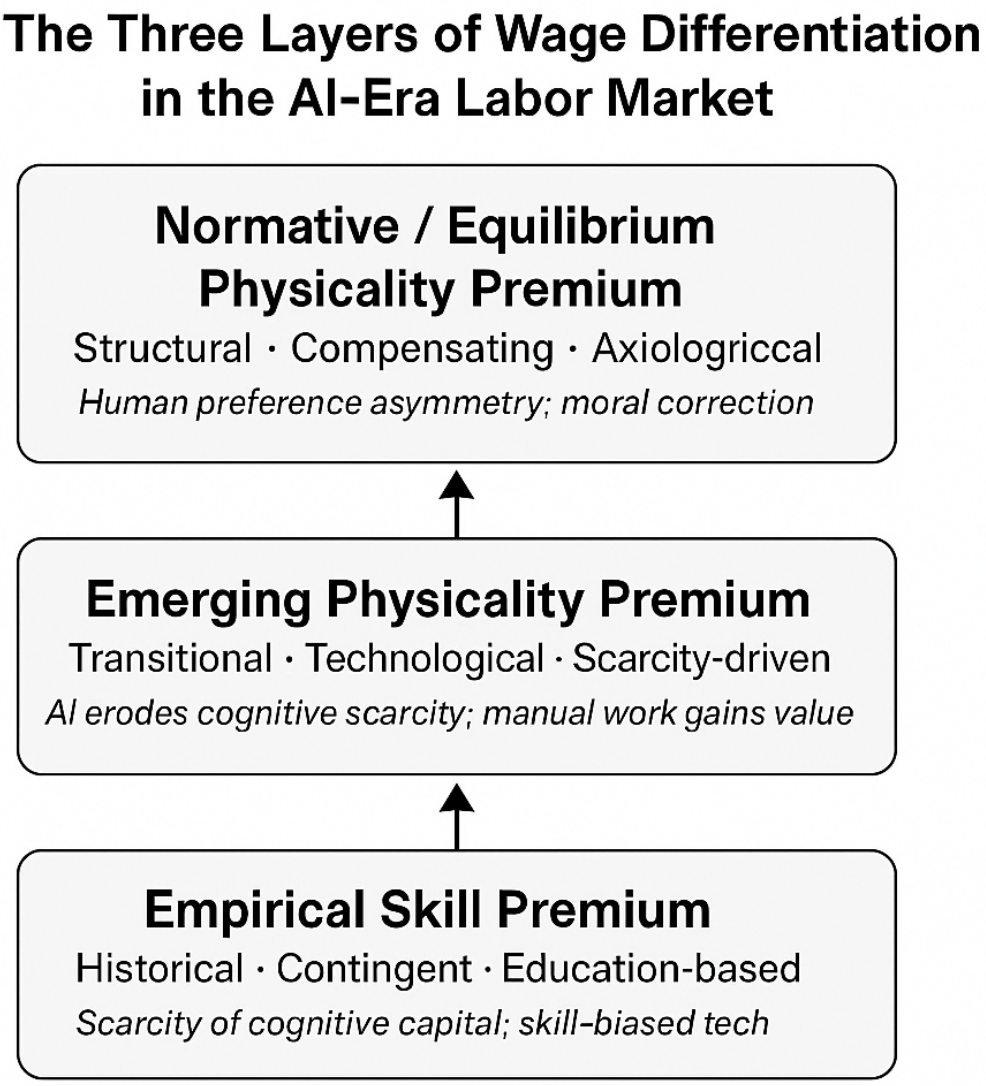
Sennett, R. (2008). *The craftsman.* New Haven, CT: Yale University Press.

Skillwork. (2025). *Labor shortage in the trades – causes and effects.* [Blog post]. Retrieved from https://www.skillwork.com

Smith, A. (1776). *An inquiry into the nature and causes of the wealth of nations.* London: W. Strahan and T. Cadell. Consulted via Project Gutenberg (https://www.gutenberg.org/ebooks/3300).

Yamada, G. (2015). The boom in university graduates and the risk of underemployment. *IZA World of Labor*, (165). https://doi.org/10.15185/izawol.165

Figure 1. Conceptual Structure of the "Physicality Premium"


The Three Layers of Wage Differentiation in the AI-Era Labor Market
Normative / Equilibrium Physicality Premium
Structural · Compensating · Axiologriccal
Human preference asymmetry; moral correction
Emerging Physicality Premium
Transitional · Technological · Scarcity-driven
AI erodes cognitive scarcity; manual work gains value
Empirical Skill Premium
Historical · Contingent · Education-based
Scarcity of cognitive capital; skill-biased tech

Layers of Wage Differentials in the AI-Era Labor Market:

This conceptual model distinguishes three layers of wage differentiation that have defined the evolution of labor markets from the late industrial age to the AI era.

1. Empirical Skill Premium (Historical–Contingent):
The historically observed advantage of educated and cognitively skilled workers, driven by the scarcity of intellectual capital and skill-biased technological change (1980s–2000s).

2. Emerging Physicality Premium (Transitional–Technological):
The contemporary reversal in which embodied, manual, and on-site labor gains relative value as AI and automation reduce the scarcity of cognitive labor. It reflects a temporary rebalancing as physical presence becomes harder to substitute technologically.

3. Normative / Equilibrium Physicality Premium (Structural–Axiological):
A theoretical compensating differential that should persist even in equilibrium, grounded in human preference asymmetry (a bias toward intellectual work) and the cultural hierarchy of labor. It represents the enduring structural premium required to equalize total utility across occupations.

These three layers form a continuum—from contingent market imbalances to structural human constants—revealing that the "physicality premium" is not merely a short-term phenomenon, but the unveiling of a long-hidden equilibrium principle.

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[Preliminary draft]